

NC/QC/YPD/2020-21/W5-KK-W13

Date: 20-07-2021

## TEST REPORT ON WET MIX MACADAM MIX

(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.

{Project\*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,  
Yelahanka Project Division,  
BBMP, Bangalore.

Name of the Agency/Contractor\*: M/s. R.M. Enterprises, Bangalore.

### TEST RESULTS

#### I. Gradation Test: TABLE I.1

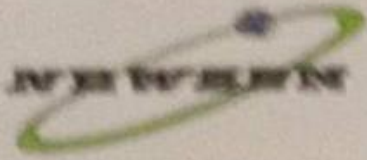
| Sieve Size<br>mm | Percent by Weight passing the<br>Sieve from the sample supplied<br>(Obtained Gradation) | Specified<br>Limits as per MoRTH<br>Specifications, V Revision-2013 |
|------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| 53.00            | 100.00                                                                                  | 100                                                                 |
| 45.00            | 98.45                                                                                   | 95-100                                                              |
| 26.50            | ---                                                                                     | -                                                                   |
| 22.40            | 70.25                                                                                   | 60-80                                                               |
| 11.20            | 53.45                                                                                   | 40-60                                                               |
| 4.75             | 34.90                                                                                   | 25-40                                                               |
| 2.36             | 22.50                                                                                   | 15-30                                                               |
| 0.600            | 18.05                                                                                   | 8-22                                                                |
| 0.075            | 4.15                                                                                    | 0-5                                                                 |

The result of the materials tested meets the standards and hence can be used for the work.  
Sample Collected Site : Vinayakanagara, 4<sup>th</sup> Main Road

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Asst. Executive Engineer  
Project Division  
Yelahanka Zone  
BBMP, Bangalore - 92





# NEWZEN CONSULTANTS BANGALORE

NEW TECHNOLOGIES TO INNOVATE

Date: 20-07-2021

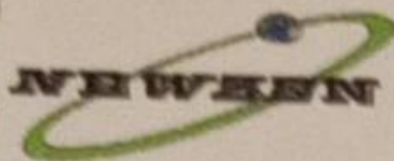
TABLE 1.2

| SL No | Test conducted                             | Test Results | Tests Conforms to IS 2386( Part I to IV)- 1963 ( Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013. |
|-------|--------------------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.    | Aggregate Impact Value                     | 27.81%       | Not more than 30.00 %                                                                                                                               |
| 2.    | Combined Flakiness and Elongation index, % | 28.48%       | Not more than 35.0 %                                                                                                                                |
| 3.    | Water absorption, %                        | 0.41 %       | Not more than 2.0 %                                                                                                                                 |
| 4.    | Plasticity Index, %                        | NP           | Not more than 6.0 %                                                                                                                                 |

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*[Signature]*  
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Yelahanka Zone  
BBMP, Bangalore - 92





# NEWZEN CONSULTANTS BANGALORE

NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-W14

Date: 23-07-2021

## TEST REPORT ON WET MIX MACADAM MIX

(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.

{Project\*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,  
Yelahanka Project Division,  
BBMP, Bangalore.

Name of the Agency/Contractor\*: M/s. R.M. Enterprises, Bangalore.

## TEST RESULTS

### 1. Gradation Test:

TABLE 1.1

| Sieve Size<br>mm | Percent by Weight passing the<br>Sieve from the sample supplied<br>(Obtained Gradation) | Specified<br>Limits as per MoRTH<br>Specifications, V Revision-2013 |
|------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| 53.00            | 100.00                                                                                  | 100                                                                 |
| 45.00            | 96.35                                                                                   | 95-100                                                              |
| 26.50            | ---                                                                                     | -                                                                   |
| 22.40            | 72.15                                                                                   | 60-80                                                               |
| 11.20            | 54.90                                                                                   | 40-60                                                               |
| 4.75             | 32.75                                                                                   | 25-40                                                               |
| 2.36             | 25.15                                                                                   | 15-30                                                               |
| 0.600            | 19.70                                                                                   | 8-22                                                                |
| 0.075            | 3.55                                                                                    | 0-5                                                                 |

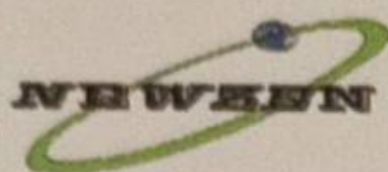
The result of the materials tested meets the standards and hence can be used for the work.  
Sample Collected Site : Vinayakanagara, Cross Road 02 From 3rd Main Rd to 5th Main Rd.

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NEWZEN CONSULTANT BANGALORE, #13, 10<sup>TH</sup> MAIN ROAD 2<sup>ND</sup> CROSS JNANAJYOTHI NAGARA,  
JNANABHARATHI, BANGALORE-560056. CELL NO: +91 8792620231, 080 23240187  
EMAIL: newzen576@gmail.com



Date: 23-07-2021

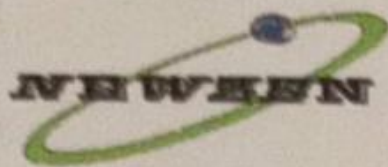
TABLE 1.2

| SL No | Test conducted                             | Test Results | Tests Conforms to IS 2386( Part I to IV)- 1963 ( Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013. |
|-------|--------------------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.    | Aggregate Impact Value                     | 27.42%       | Not more than 30.00 %                                                                                                                               |
| 2.    | Combined Flakiness and Elongation index, % | 28.68%       | Not more than 35.0 %                                                                                                                                |
| 3.    | Water absorption, %                        | 0.42 %       | Not more than 2.0 %                                                                                                                                 |
| 4.    | Plasticity Index, %                        | NP           | Not more than 6.0 %                                                                                                                                 |

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NC/QC/YPD/2020-21/W5-KK-W15

Date: 26-07-2021

## TEST REPORT ON WET MIX MACADAM MIX (GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.  
{Project\*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,  
Yelahanka Project Division,  
BBMP, Bangalore.

Name of the Agency/Contractor\*: M/s. R.M. Enterprises, Bangalore.

### TEST RESULTS

#### 1. Gradation Test:

TABLE 1.1

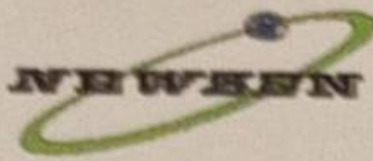
| Sieve Size<br>mm | Percent by Weight passing the<br>Sieve from the sample supplied<br>(Obtained Gradation) | Specified<br>Limits as per MoRTH<br>Specifications, V Revision-2013 |
|------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| 53.00            | 100.00                                                                                  | 100                                                                 |
| 45.00            | 96.45                                                                                   | 95-100                                                              |
| 26.50            | ---                                                                                     | -                                                                   |
| 22.40            | 73.25                                                                                   | 60-80                                                               |
| 11.20            | 54.10                                                                                   | 40-60                                                               |
| 4.75             | 31.80                                                                                   | 25-40                                                               |
| 2.36             | 24.55                                                                                   | 15-30                                                               |
| 0.600            | 18.70                                                                                   | 8-22                                                                |
| 0.075            | 4.10                                                                                    | 0-5                                                                 |

The result of the materials tested meets the standards and hence can be used for the work.  
Sample Collected Site : Vinayakanagara, 6th Cross Rd From SLV Residency.

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BBMP, Bangalore - 92





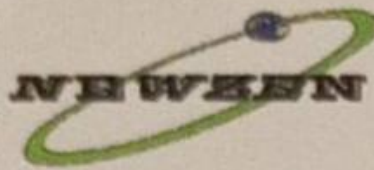
Date: 26-07-2021

TABLE 1.2

| SL No | Test conducted                             | Test Results | Tests Conforms to IS 2386( Part I to IV)- 1963 ( Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013. |
|-------|--------------------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.    | Aggregate Impact Value                     | 27.63%       | Not more than 30.00 %                                                                                                                               |
| 2.    | Combined Flakiness and Elongation index, % | 28.74 %      | Not more than 35.0 %                                                                                                                                |
| 3.    | Water absorption, %                        | 0.41%        | Not more than 2.0 %                                                                                                                                 |
| 4.    | Plasticity Index, %                        | NP           | Not more than 6.0 %                                                                                                                                 |

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BBMP, Bangalore - 92





NC/QC/YPD/2020-21/W5-KK-BD1

Date: 09-08-2021

## 1. TEST REPORT ON BITUMEN SAMPLE:

Sub: Testing of Bitumen sample VG-30 Grade.

{Project\*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,  
Yelahanka Project Division,  
BBMP, Bangalore.

Name of the Agency/Contractor\*: M/s. R.M. Enterprises, Bangalore.

Technical Reference: Ministry of Road Transport and Highways, V Revision, 2013 and IS 73: 1992.

**TABLE 1.1 ;**

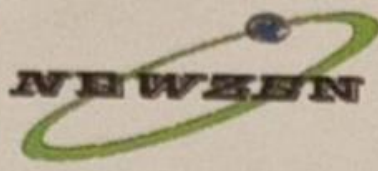
| SL No | Details                              | Test Results         | Requirements as per I.S 73 -1992 Specifications |
|-------|--------------------------------------|----------------------|-------------------------------------------------|
| 1.    | Penetration at 25 <sup>0</sup> C     | 52.80 <sup>0</sup> C | Min. 45                                         |
| 2.    | Ductility Value at 25 <sup>0</sup> C | 109.30 cm            | 40                                              |
| 3.    | Flash point                          | 244 <sup>0</sup> C   | Minimum 220 <sup>0</sup> C                      |
| 4.    | Softening point                      | 51.30 <sup>0</sup> C | Min. 47                                         |

The result of the materials tested meets the standards and hence can be used for the work.  
Sample Collected Site : Vinayakanagara, 5<sup>th</sup> Main Road.

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20.08.2021  
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NC/QC/YPD/2020-21/W5-KK-CD1

Date: 09-08-2021

## 1. TEST REPORT ON COARSE AGGREGATE:

Sub: Testing of Coarse Aggregate used in Dense Graded Bituminous Macadam.

{Project\*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,  
Yelahanka Project Division,  
BBMP, Bangalore.

Name of the Agency/Contractor\*: M/s. R.M. Enterprises, Bangalore.

TABLE 1.1;

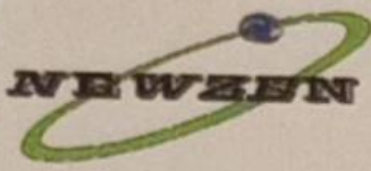
| SL No | Test conducted                             | Test Results | Tests Conforms to IS 2386( Part I to IV)- 1963 ( Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013. |
|-------|--------------------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.    | Aggregate Impact Value                     | 23.06%       | Not more than 27.00 % for DBM                                                                                                                       |
| 2.    | Combined Flakiness and Elongation index, % | 26.76%       | Not more than 35.0 %                                                                                                                                |
| 3.    | Water absorption, %                        | 0.42%        | Not more than 2.0 %                                                                                                                                 |
| 4.    | Specific gravity                           | 2.62         | -----                                                                                                                                               |
| 5.    | Soundness                                  | 6.86 %       | Max. 12 % in Sodium Sulphate                                                                                                                        |

The result of the materials tested meets the standards and hence can be used for the work.  
Sample Collected Site : Vinayakanagara, 5<sup>th</sup> Main Road.

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NC/QC/YPD/2020-21/W5-KK-DBM1

Date: 16-08-2021

## 1. TEST REPORT ON BITUMINOUS MIXES :

### (BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.

{Project\*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,  
Yelahanka Project Division,  
BBMP, Bangalore.

Name of the Agency/Contractor\*: M/s. R.M. Enterprises, Bangalore.

## TEST RESULTS

A. Type of Construction : Dense Graded Bituminous Macadam.

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = 4.52 %

2. Gradation Test

TABLE 1.1

| Sieve Size, mm | Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation) | Gradation requirement as per Table 500-10 of MORTH Specifications- 2013 DBM (Grading - 2) |
|----------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 37.5           | 100                                                                               | 100                                                                                       |
| 26.5           | 96.25                                                                             | 90-100                                                                                    |
| 19.0           | 81.15                                                                             | 71-95                                                                                     |
| 13.20          | 74.40                                                                             | 56-80                                                                                     |
| 4.75           | 48.75                                                                             | 38-54                                                                                     |
| 2.36           | 36.05                                                                             | 28-42                                                                                     |
| 0.300          | 17.95                                                                             | 7-21                                                                                      |
| 0.075          | 5.40                                                                              | 2-8                                                                                       |

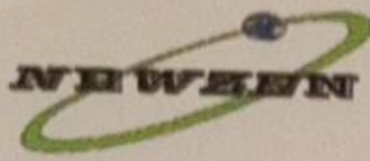
The result of the materials tested meets the standards and hence can be used for the work.  
Sample Collected Site : Vinayakanagara, 5<sup>th</sup> Main Road.

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Asst. Executive Engineer  
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NEWZEN CONSULTANT BANGALORE, #13, 10<sup>TH</sup> MAIN ROAD 2<sup>ND</sup> CROSS JNANAJYOTHI NAGARA,  
JNANABHARATHI, BANGALORE-560056. CELL NO: +91 8792620231, 080 23240187  
EMAIL: newzen576@gmail.com



NC/QC/YPD/2020-21/W5-KK-DS1

Date: 16-08-2021

## 1. TEST REPORT ON BITUMINOUS MIXES : (STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.  
{Project\*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,  
Yelahanka Project Division,  
BBMP, Bangalore.

Name of the Agency/Contractor\*: M/s. R.M. Enterprises, Bangalore.

### TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

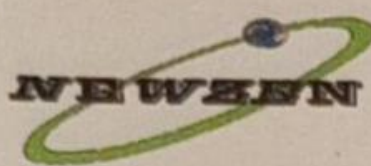
| Sl. No. | Test Property                                 | *Test results obtained by Marshall method | Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications |
|---------|-----------------------------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------|
| 1       | Marshall Stability (75 blows) (At 60°C), kgs. | 1238                                      | 900                                                                                                  |
| 2       | Marshall Flow at 60°C, mm.                    | 3.26                                      | 2.0 - 4.0                                                                                            |

The result of the materials tested meets the standards and hence can be used for the work.  
Sample Collected Site : Vinayakanagara, 5<sup>th</sup> Main Road.

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*[Signature]*  
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# NEWZEN CONSULTANTS BANGALORE

NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-DBM2

Date: 17-08-2021

## 1. TEST REPORT ON BITUMINOUS MIXES :

### (BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.

{Project\*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,  
Yelahanka Project Division,  
BBMP, Bangalore.

Name of the Agency/Contractor\*: M/s. R.M. Enterprises, Bangalore.

## TEST RESULTS

### A. Type of Construction : Dense Graded Bituminous Macadam.

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = 4.52 %

### 2. Gradation Test

TABLE 1.1

| Sieve Size, mm | Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation) | Gradation requirement as per Table 500-10 of MORTH Specifications- 2013 DBM (Grading - 2) |
|----------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 37.5           | 100                                                                               | 100                                                                                       |
| 26.5           | 96.45                                                                             | 90-100                                                                                    |
| 19.0           | 81.55                                                                             | 71-95                                                                                     |
| 13.20          | 72.65                                                                             | 56-80                                                                                     |
| 4.75           | 47.15                                                                             | 38-54                                                                                     |
| 2.36           | 35.80                                                                             | 28-42                                                                                     |
| 0.300          | 19.25                                                                             | 7-21                                                                                      |
| 0.075          | 5.60                                                                              | 2-8                                                                                       |

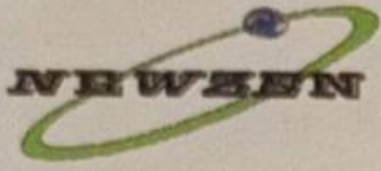
The result of the materials tested meets the standards and hence can be used for the work.

Sample Collected Site : Vinayakanagara, 6<sup>th</sup> Main Road.

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Asst. Executive Engineer  
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NC/QC/YPD/2020-21/W5-KK-DS2

Date: 17-08-2021

**1. TEST REPORT ON BITUMINOUS MIXES :**  
**(STABILITY OF BITUMINOUS MIX)**

**Sub:** To determine the stability of bituminous mix for DBM mix sample.

**{Project\*:** Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}

**Ref.:** Material testing/PMC/20-21,

**Report Required for:** Assistant Executive Engineer,  
Yelahanka Project Division,  
BBMP, Bangalore.

**Name of the Agency/Contractor\*:** M/s. R.M. Enterprises, Bangalore.

**TEST RESULTS**

**Table 1: Properties of DBM (Gr-2) Mix**

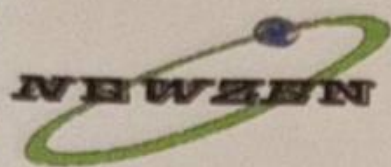
| Sl. No. | Test Property                                 | *Test results obtained by Marshall method | Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications |
|---------|-----------------------------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------|
| 1       | Marshall Stability (75 blows) (At 60°C), kgs. | 1256                                      | 900                                                                                                  |
| 2       | Marshall Flow at 60°C, mm.                    | 3.42                                      | 2.0 - 4.0                                                                                            |

The result of the materials tested meets the standards and hence can be used for the work.  
Sample Collected Site : Vinayakanagara, 6<sup>th</sup> Main Road

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# NEWZEN CONSULTANTS BANGALORE

NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-DBM3

Date: 18-08-2021

## 1. TEST REPORT ON BITUMINOUS MIXES :

### (BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.

{Project\*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,  
Yelahanka Project Division,  
BBMP, Bangalore.

Name of the Agency/Contractor\*: M/s. R.M. Enterprises, Bangalore.

## TEST RESULTS

### A. Type of Construction : Dense Graded Bituminous Macadam.

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = 4.51 %

### 2. Gradation Test

TABLE 1.1

| Sieve Size, mm | Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation) | Gradation requirement as per Table 500-10 of MORTH Specifications- 2013 DBM (Grading - 2) |
|----------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 37.5           | 100                                                                               | 100                                                                                       |
| 26.5           | 97.15                                                                             | 90-100                                                                                    |
| 19.0           | 82.15                                                                             | 71-95                                                                                     |
| 13.20          | 73.40                                                                             | 56-80                                                                                     |
| 4.75           | 49.70                                                                             | 38-54                                                                                     |
| 2.36           | 32.05                                                                             | 28-42                                                                                     |
| 0.300          | 18.95                                                                             | 7-21                                                                                      |
| 0.075          | 6.55                                                                              | 2-8                                                                                       |

The result of the materials tested meets the standards and hence can be used for the work.

Sample Collected Site : Vinayakanagara, 6<sup>th</sup> B Main Road

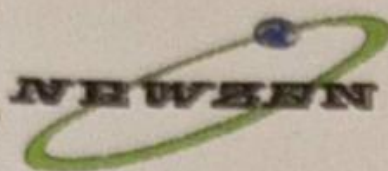
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NC/QC/YPD/2020-21/W5-KK-DS3

Date: 18-08-2021

## 1. TEST REPORT ON BITUMINOUS MIXES : (STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.

{Project\*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,  
Yelahanka Project Division,  
BBMP, Bangalore.

Name of the Agency/Contractor\*: M/s. R.M. Enterprises, Bangalore.

### TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

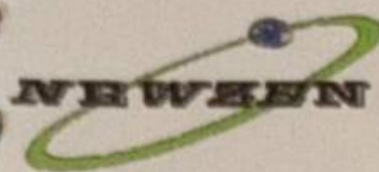
| Sl. No. | Test Property                                 | *Test results obtained by Marshall method | Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications |
|---------|-----------------------------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------|
| 1       | Marshall Stability (75 blows) (At 60°C), kgs. | 1258                                      | 900                                                                                                  |
| 2       | Marshall Flow at 60°C, mm.                    | 3.44                                      | 2.0 - 4.0                                                                                            |

The result of the materials tested meets the standards and hence can be used for the work.  
Sample Collected Site : Vinayakanagara, 6<sup>th</sup> B Main Road

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Project Division  
Yelahanka Zone  
BBMP, Bangalore - 92





NC/QC/YPD/2020-21/W5-KK-DBM4

Date: 18-08-2021

## I. TEST REPORT ON BITUMINOUS MIXES :

### (BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.

{Project\*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,  
Yelahanka Project Division,  
BBMP, Bangalore.

Name of the Agency/Contractor\*: M/s. R.M. Enterprises, Bangalore.

## TEST RESULTS

### A. Type of Construction : Dense Graded Bituminous Macadam.

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = 4.53 %

### 2. Gradation Test

TABLE 1.1

| Sieve Size, mm | Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation) | Gradation requirement as per Table 500-10 of MORTH Specifications- 2013 DBM (Grading - 2) |
|----------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 37.5           | 100                                                                               | 100                                                                                       |
| 26.5           | 95.05                                                                             | 90-100                                                                                    |
| 19.0           | 84.30                                                                             | 71-95                                                                                     |
| 13.20          | 72.80                                                                             | 56-80                                                                                     |
| 4.75           | 48.40                                                                             | 38-54                                                                                     |
| 2.36           | 34.95                                                                             | 28-42                                                                                     |
| 0.300          | 18.10                                                                             | 7-21                                                                                      |
| 0.075          | 6.45                                                                              | 2-8                                                                                       |

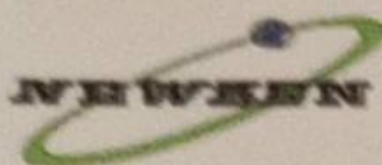
The result of the materials tested meets the standards and hence can be used for the work.  
Sample Collected Site : Babanagara, 1<sup>st</sup> Main 1<sup>st</sup> Cross Rd

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Asst. Executive Engineer  
Project Division  
Yelahanka Zone

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NC/QC/YPD/2020-21/W5-KK-DS4

Date: 18-08-2021

**1. TEST REPORT ON BITUMINOUS MIXES :**  
**(STABILITY OF BITUMINOUS MIX)**

Sub: To determine the stability of bituminous mix for DBM mix sample.

{Project\*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,  
Yelahanka Project Division,  
BBMP, Bangalore.

Name of the Agency/Contractor\*: M/s. R.M. Enterprises, Bangalore.

**TEST RESULTS**

**Table 1: Properties of DBM (Gr-2) Mix**

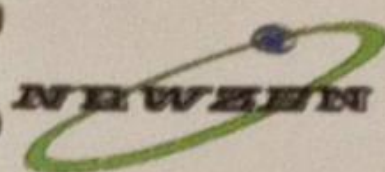
| Sl. No. | Test Property                                 | *Test results obtained by Marshall method | Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications |
|---------|-----------------------------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------|
| 1       | Marshall Stability (75 blows) (At 60°C), kgs. | 1246                                      | 900                                                                                                  |
| 2       | Marshall Flow at 60°C, mm.                    | 3.34                                      | 2.0 - 4.0                                                                                            |

The result of the materials tested meets the standards and hence can be used for the work.  
Sample Collected Site : Babanagara, 1<sup>st</sup> Main 1<sup>st</sup> Cross Rd

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22/8/21  
Asst. Executive Engineer  
Project Division  
Yelahanka Zone  
BBMP, Bangalore - 92





NC/QC/YPD/2020-21/W5-KK-DBM5

Date: 25-08-2021

## 1. TEST REPORT ON BITUMINOUS MIXES :

### (BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.

{Project\*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,  
Yelahanka Project Division,  
BBMP, Bangalore.

Name of the Agency/Contractor\*: M/s. R.M. Enterprises, Bangalore.

## TEST RESULTS

### A. Type of Construction : Dense Graded Bituminous Macadam.

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = 4.52 %

### 2. Gradation Test

TABLE 1.1

| Sieve Size, mm | Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation) | Gradation requirement as per Table 500-10 of MORTH Specifications- 2013 DBM (Grading - 2) |
|----------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 37.5           | 100                                                                               | 100                                                                                       |
| 26.5           | 96.40                                                                             | 90-100                                                                                    |
| 19.0           | 84.90                                                                             | 71-95                                                                                     |
| 13.20          | 73.45                                                                             | 56-80                                                                                     |
| 4.75           | 45.05                                                                             | 38-54                                                                                     |
| 2.36           | 39.65                                                                             | 28-42                                                                                     |
| 0.300          | 17.20                                                                             | 7-21                                                                                      |
| 0.075          | 6.75                                                                              | 2-8                                                                                       |

The result of the materials tested meets the standards and hence can be used for the work.  
Sample Collected Site : Babanagara, 2<sup>nd</sup> Cross Rd

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NC/QC/YPD/2020-21/W5-KK-DS5

Date: 25-08-2021

**1. TEST REPORT ON BITUMINOUS MIXES :**  
**(STABILITY OF BITUMINOUS MIX)**

**Sub:** To determine the stability of bituminous mix for DBM mix sample.

**{Project\*:** Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}

**Ref.:** Material testing/PMC/20-21,

**Report Required for:** Assistant Executive Engineer,  
Yelahanka Project Division,  
BBMP, Bangalore.

**Name of the Agency/Contractor\*:** M/s. R.M. Enterprises, Bangalore.

**TEST RESULTS**

**Table 1: Properties of DBM (Gr-2) Mix**

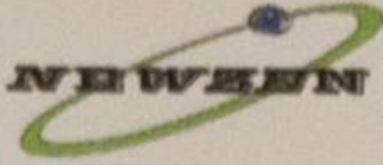
| Sl. No. | Test Property                                 | *Test results obtained by Marshall method | Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications |
|---------|-----------------------------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------|
| 1       | Marshall Stability (75 blows) (At 60°C), kgs. | 1248                                      | 900                                                                                                  |
| 2       | Marshall Flow at 60°C, mm.                    | 3.36                                      | 2.0 - 4.0                                                                                            |

The result of the materials tested meets the standards and hence can be used for the work.  
Sample Collected Site : Babanagara, 2<sup>nd</sup> Cross Rd

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Asst. Executive Engineer  
Project Division  
Yelahanka Zone  
BBMP, Bangalore - 92

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# NEWZEN CONSULTANTS BANGALORE

NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-DBM6

Date: 26-08-2021

## 1. TEST REPORT ON BITUMINOUS MIXES :

### (BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.

{Project\*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,  
Yelahanka Project Division,  
BBMP, Bangalore.

Name of the Agency/Contractor\*: M/s. R.M. Enterprises, Bangalore.

## TEST RESULTS

B. Type of Construction : **Dense Graded Bituminous Macadam.**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.50 %**

## 2. Gradation Test

TABLE 1.1

| Sieve Size, mm | Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation) | Gradation requirement as per Table 500-10 of MORTH Specifications- 2013 DBM (Grading - 2) |
|----------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 37.5           | 100                                                                               | 100                                                                                       |
| 26.5           | 94.60                                                                             | 90-100                                                                                    |
| 19.0           | 83.95                                                                             | 71-95                                                                                     |
| 13.20          | 73.20                                                                             | 56-80                                                                                     |
| 4.75           | 47.35                                                                             | 38-54                                                                                     |
| 2.36           | 34.95                                                                             | 28-42                                                                                     |
| 0.300          | 18.30                                                                             | 7-21                                                                                      |
| 0.075          | 6.45                                                                              | 2-8                                                                                       |

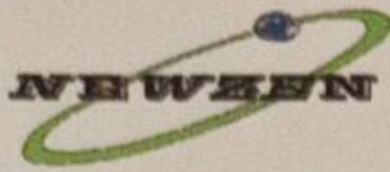
The result of the materials tested meets the standards and hence can be used for the work.  
Sample Collected Site : Babanagara, Cross Rd 03.

Asst. Executive Engineer  
Project Division  
Yelahanka Zone  
BBMP, Bangalore - 92

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NEWZEN CONSULTANT BANGALORE, #13, 10<sup>TH</sup> MAIN ROAD 2<sup>ND</sup> CROSS JNANAJYOTHI NAGARA,  
JNANABHARATHI, BANGALORE-560056. CELL NO: +91 8792620231, 080 23240187  
EMAIL: newzen576@gmail.com



NC/QC/YPD/2020-21/W5-KK-DS6

Date: 26-08-2021

## 1. TEST REPORT ON BITUMINOUS MIXES : (STABILITY OF BITUMINOUS MIX)

**Sub:** To determine the stability of bituminous mix for DBM mix sample.

{Project\*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}

**Ref.:** Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,  
Yelahanka Project Division,  
BBMP, Bangalore.

Name of the Agency/Contractor\*: M/s. R.M. Enterprises, Bangalore.

## TEST RESULTS

**Table 1: Properties of DBM (Gr-2) Mix**

| Sl. No. | Test Property                                 | *Test results obtained by Marshall method | Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications |
|---------|-----------------------------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------|
| 1       | Marshall Stability (75 blows) (At 60°C), kgs. | 1250                                      | 900                                                                                                  |
| 2       | Marshall Flow at 60°C, mm.                    | 3.46                                      | 2.0 - 4.0                                                                                            |

The result of the materials tested meets the standards and hence can be used for the work.

Sample Collected Site : Babanagara, Cross Rd 03.

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Project Division  
Yelahanka Zone  
BBMP, Bangalore - 92

